1: Underhill E-5 (1931-1935)1946 NU28 Papago NU28

leave a pencil, instead of an arrow, and wish that the party would have no flat tires.

SACRED OBJECTS

Sacred objects were sometimes single fetishes and sometimes collections of objects brought together through the years and kept in a ceremonial basket. Such bundles belonging to villages were generally said to be "from the beginning," but occasionally new finds have been added, notably the slate tablets, the three-quarter grooved axes of the ancient inhabitants, and the peculiar limestone formations of the district. One new village, which had no fetish, acquired some of the latter and ultimately displayed them at the rainmaking ceremony, as did the mother village.

Individuals had fetishes connected with dreams or purification. The shaman had special quartz crystals that were found under the direction of his guiding power. The enemy slayer kept a trophy of an Apache's hair, belt, or moccasin. The salt pilgrim treasured sea shells or pebbles. The eagle killer had the right to a designated portion of eagle down. The "meeter" of some guardian spirit often found and preserved, after his supernatural experience, a claw or a feather, or he might carve an image of his visitant or pick up a stone which seemed to resemble it. Even an unauthorized person sometimes came upon a peculiarly shaped stone and tried out its powers. If he were "meant to have it," he would later receive a visitant.[2]

[E115] The proper way to keep fetishes was in an oblong basket of twilled yucca.[3] This was called *wáca*, in distinction from the ordinary coiled basket, *hoa*, and was, say the Papago, the usual container in former days. It resembles some old Yaqui forms,[4] but is even more common in Mexico and South America.[5] A fetish owner kept his basket packed with eagle down and deer tails, and periodically he "fed" the sacred object with cane cigarettes and even with

[2] Cf. Hopi fetish stones, Parsons, 1933, p. 67.
[3] For description and illustration of this basket see Kissell, p. 170.
[4] Hough, Pl. 256.
[5] A duplicate of this basket may be seen in the exhibit from Guiana in the Museum of the University of Pennsylvania.

1: Underhill E-5 (1931-1935)1946 NU28 Papago NU28

ingly. Each man took only one horse, rode it to the salt beds, loaded it, and walked home. Each pilgrim must keep his horse fresh for the trip. If he had none, he might borrow, and no one would dare refuse. The compensation to the horse's owner was half a load of salt, or one saddlebagfull. The saddlebags taken were the ancient netted receptacles of maguey fiber. Inside these the salt was wrapped in handwoven cotton sheets or, in old days, fiber mats. Each pilgrim must make ropes of hair or of maguey fiber, for a bridle and for hobbling his horse. He wore, in the old days, only breech cloth and sandals. At his waist he carried two canteens, made of gourds, covered with rabbit skin, and slung in a grass net. He also carried a pouch of parched corn meal and the small watertight basket which was his only utensil for eating and drinking. Beside the corn meal, "ripe men" might carry as much dried squash, tortillas, or any other food as they could manage.

For all equipment there was a special vocabulary, analogous to that used on the warpath. The horse was called the partner; the gourd, the jar; the basket, the dish; pinole, gruel; hay, weeds; salt, corn. For other common terms there were words showing a similar slight variation. These words the neophyte must learn and not misuse, under pain of accident on the journey.

Each village took prayer sticks in some form, to be offered to the ocean. The following list will show the variety introduced under the general heading prayer-stick offering:

Komarik: prayer sticks with two turkey or eagle feathers. Left at each camping place, and one thrown by each man into the sea.

Pisinimo: eagle down; no sticks. Each man brings his own down and throws it into the sea.

Anegam and Santa Rosa: peeled white sticks of western willow; no feathers. Carried by leader. One placed at every camp, and one given each man to throw in the sea.

Akchin: sticks with turkey or eagle feathers carried by leader, placed at each camp along the way and given men to carry into the sea and to bring back again. One large stick, with streamer of red cloth, planted on the beach.

San Miguel: strips of red cloth thrown into ocean.

1: Underhill E-5 (1931-1935)1946 NU28 Papago NU28

tunities—bade him use four feathers instead of two. Then the feathers were first tied in pairs, and afterwards the pairs were fastened together.

The shaman's most precious possession was his crystal, which shed light "like your car lamps" on the seat of disease or the hiding place of an evil shaman. Generally, a shaman possessed not one, but the ceremonial number, four. According to legend, these flakes of quartz are the solidified saliva of I'itoi, who spat on the head of the first shaman so that saliva entered the man's heart. All shamans, supposedly, are able to keep their crystals in their hearts, and it is these which give their saliva its power if they blow it over a patient.

Theoretically, crystals were not obtained from outside, but grew within the shaman's body, "lots of them, like honey in a honeycomb." Their growth in the heart of a young girl has been mentioned, and the same informant recounted: "My brother was a shaman, but he had a bad wife who came to sleep with him while she was menstruating. That killed his crystals so that they rotted away, and another shaman, who looked into his heart, saw it like an empty honeycomb."(26)

However, the young shaman could easily find crystals by hunting over the rocky hills, where quartz fragments abound. Even this was done according to pattern.

> The eagle told me to go at sunset to a certain place and look for crystals. So I did, and in a little hollow I saw four of them lying, all together. I held out my hand, and they jumped into it. Then I held my hand before my mouth, and one by one they jumped down my throat.(16)

Asked to exhibit them, the informant objected: "I keep them in my heart. I never show them."

However, the writer succeeded in obtaining a set of crystals belonging to a defunct shaman, whose family feared their power. They were from one to two inches long, a quarter to half an inch thick and irregularly shaped. They were contained in a little fringed buckskin bag, dyed red and having a long string so that it could be worn around the neck.

2: Underhill E-5 (1931-1935)1939 NU28 Papago NU28

someone was hungry while there was food in the village, he had only to sit outside a house where people were eating. It was bad manners to ask for food but equally bad to fail to offer it. One informant objected to having any house too near her own because "they will see us eat and we will have to send them something." If the hungry person owed his trouble to laziness or a stupid wife, he would be talked about and shamed into reform.

Occasionally, disaster overtook a whole family through illness or enemy raids and then it was the responsibility of the village to take care of the sufferers, the most generous man getting the most credit. It is safe to say that no one ever went hungry while there was food in the village for farmers, food gatherers and hunters would all share with him. No definite return was expected except general respect and good will but "if a person got the name of being stingy, he always had a hard time. Even his relatives didn't help him more then they had to" (26).

Papago gift basket.
Quantities are measured by the lines parallel to the basket rim.

In the constant interchange of gifts, certain equivalents had been worked out. The usual container was a basket bowl with a black pattern involving many lines parallel to the rim. A person receiving such a basket would note to what line the corn or beans reached and then fill it to the same point for the return gift. To fill it even higher was an act of virtue but to fill it short of the line was to commit social suicide. The bowls were made in two or three standard sizes so that almost any bowl formed a rough measure. The women's carrying nets were also about the same size with patterns which served for markers. One carrying net was equal to two ordinary basket bowls. There was a rough understanding as to the number of squash or jars of cactus syrup which equaled these measures for corn and beans.

TRADE

Such measures were always kept in mind in the exchange with non-relatives. It was not trade in the full sense, for there was no

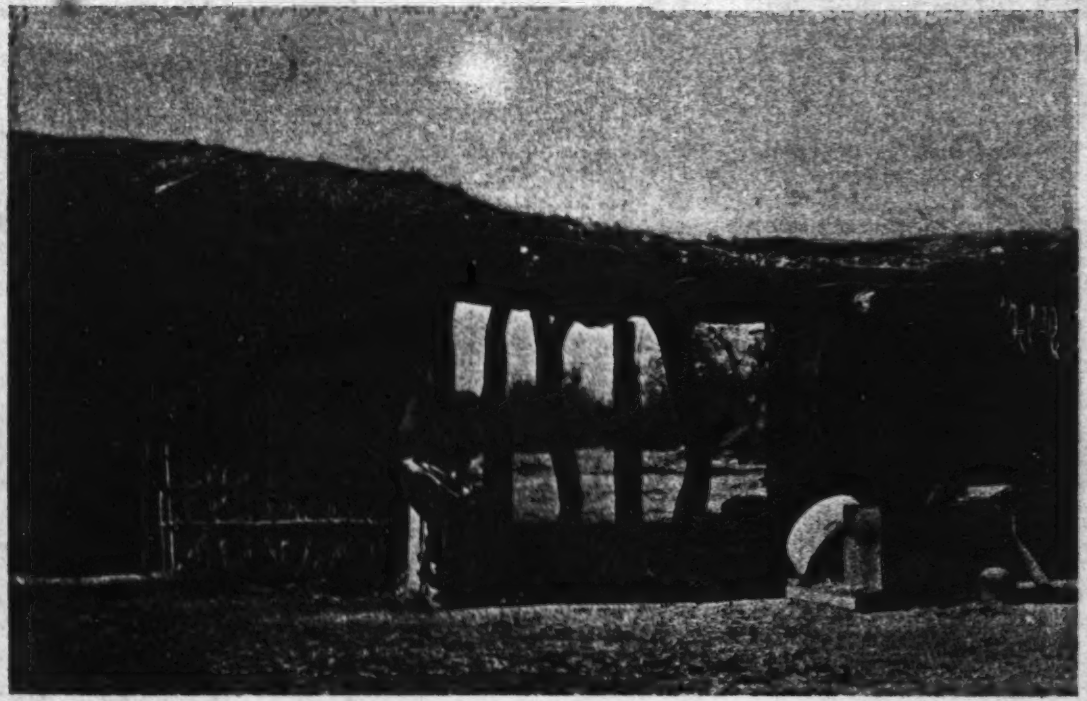
4: Joseph et al D, E-5 (1942-1943) 1949
NU28 Papago NU28

PLATE V

142
285
291
415

Clark Abbott

PAPAGO BASKETMAKER



United States Indian Service

RESTING BY THE RAMADA OF A WATTLE-AND-DAUB HOUSE
Fireplace is in the right foreground, with squash curls hanging above to dry

[p.41]

4: Joseph et al D,E-5 (1942-1943) 1949
NU28 Papago NU28

343
516
415

4: Joseph et al D, E-5 (1942-1943) 1949
NU28 Papago NU28

PLATE IX

222
417
137

Jane Chesley

a) Picking the fruit from the giant saguaro

415
516

Jane Chesley

b) The fruit goes into an olla for cooking

AT THE CACTUS CAMP

[p. 75]

854
285
415
857

PLATE XII

[p. 120]

Raymond B. Spicer

UNDER THE RAMADA

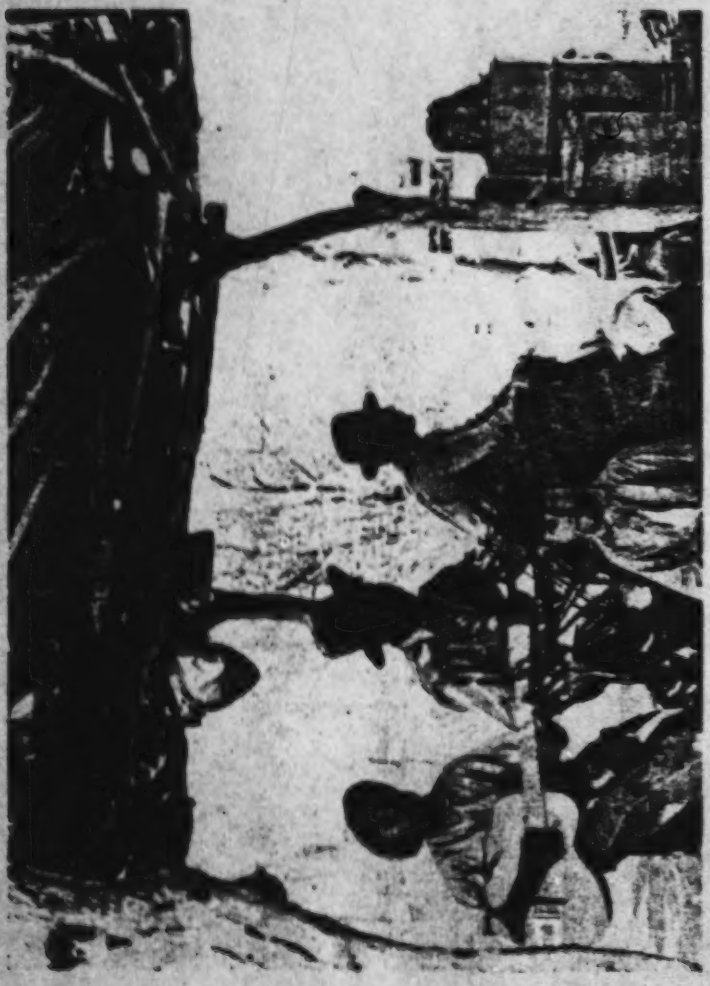
Sister swings baby in his hammock while the mother works. Olla at right holds drinking water for the family

4: Joseph et al D.E-5 (1942-1943) 1949
NU28 Papago NU28

4: Joseph et al D, E-5 (1942-1943) 1949
NU28 Papago NU28

534
415
343

PLATE XVIII



PAPAGO LADS MAKING MUSIC UNDER THE RAMADA

[p. 155]

5; Castetter & Bell N-5 (1938-1940) 1942
NU28 Papago NU28
Pima NU29

for planting cotton in the Salt River Valley in a normal season is during the first two weeks of March.[86] Browne,[87] writing in 1874, noted the Pima planted cotton when mesquite began to leaf out (late March to mid-April), and this corresponds rather well with that of the Maricopa who planted cotton in late March.[88]

Gourds

Kino's only reference to gourds is in a letter to him from Captain Pedro de Peralta, who reported that *tecomates* (gourd vessels) and other spoils which the Apache had stolen in Saracachi had been recovered.[89] Velarde[90] makes two references in this connection. Writing of the paucity of furniture in the habitations of Pimería, he states there were some calabashes *(calabazas)* in which to carry and hold water; also that the Pimans buried the males with their quiver and arrows, some food and a little calabash *(calabazo)* of water. These were doubtless true gourds *(Lagenaria siceraria)*. Mange[91] records that in several places in Pimería the Indians gave his party food in large chocolate cups *(jícaras)*, which were possibly gourd vessels.[92] The use of gourds by the Pima was mentioned by Whittemore in 1893, and Russell,[93] who worked among the Pima forty years ago, noted that cultivated gourds had been known to the Pima for a long time. Thus, the historical evidence indicates the Pimans had and used gourds at the close of the seventeenth century, but there is no

[86] King and Loftus, *Agricultural Investigations*, p. 5; King, Beckett and Parker, *Agricultural Investigations*, p. 25; King, *Crop Tests at the Cooperative Testing Station*, p. 10.

[87] Browne, *Adventures in the Apache Country*, p. 109.

[88] Spier, *Piman Tribes*, p. 49.

[89] Bolton, *Kino*, I, 270.

[90] Wyllys, *op. cit.*, pp. 138, 158.

[91] Mange, *op. cit.*, pp. 249, 289.

[92] The academic translation of the term *jícara* is gourd. However, Dr. Lawrence B. Kiddle, Department of Spanish, Tulane University, has made a detailed study of the meaning of the word *jícara* in various parts of the New World, and he informs us that, as used in Mange's treatise, the cups in all probability should be translated basket.

[93] Whittemore, in *Among the Pimas*, p. 54; Russell, *op. cit.*, p. 30.

5: Castetter & Bell N-5 (1938-1940 1942
NU28 Papago NU28
Pima NU29

specific reference to their cultivation. Although there are no archaeological specimens of gourds known from the Piman or Hohokam cultures, both fruits and seeds of *Lagenaria* have been recovered from the Canyon Creek Ruin[94] and from Tonto Cave which are on the edge of the Piman territory (see Chapter III).

Tobacco

In point of time, the first tobacco smoked by the Papago and Pima was *Nicotiana trigonophylla* Dunal, known as "Coyote's tobacco." This wild species is found from the western borders of Texas to southeastern California and southward, growing in many places throughout Arizona, and in considerable abundance in northern Mexico. It is a common weed in southern Arizona desert foothills and mountains, on plains at altitudes of four to five thousand feet, on alluvial river valley soils, and is found in a number of places on the Sells Reservation. The species also occurs, although not in abundance, in central and northern Arizona at altitudes of four to five thousand feet. This is referred to by the Papago as the tobacco which Elder Brother gave them and therefore as ancient, and it is still used by them to some extent. Those Papago who could do so made expeditions to some of the mountains in southern Arizona to secure it for their own use and for trade, particularly to the Pima who used it to a lesser extent, since, in more recent times at least, they have depended largely upon cultivated tobacco. That it was not extensively used by the Pima is indicated by the fact that some of our informants had never heard of it. It was never cultivated or even semi-cultivated, and among the Papago at least the indication is that it was smoked before they grew tobacco. Both tribes regarded it as inferior in strength and quality to common tobacco (*N. Tabacum*).

Setchell[95] refers to *N. trigonophylla* as occurring in the

[94] Haury, *The Canyon Creek Ruin*, pls. XLVII, XLVIII.
[95] Setchell, *Aboriginal Tobaccos*, p. 413.

5: Castetter & Bell N-5 (1938-1940) 1942
NU28 Papago NU28
Pima NU29

 Pi Pa

This was women's acknowledged work in which the man seldom participated, and after corn was shelled it was woman's work alone to care for it. At present many of the Pima and Papago have mechanical shellers. Shelled corn was placed on a mat or cloth and again allowed to dry for two to three days. Grains were then winnowed in a large basket by tossing into the air to remove chaff. Or this might be done by tilting the basket about four feet above ground and allowing the kernels to fall gradually on a sotol mat or cotton cloth. Corn was always shelled before being stored, then was ground into meal as needed. [462] 251 252

Storing Food Corn

Crops were never hidden by the Pima for protection from enemies. These Indians usually stored their corn, after shelling, in large cylindrical nest-like bins, or granaries, made of crudely coiled, thick bunches of arrowweed, which were very durable and lasted for years. They needed no base, since the roof or platform upon which they rested served this purpose, although a layer of arrowweed was spread on the spot where they were to stand. Over this granary was a low, cone-shaped roof of arrowweed extending beyond the rim, and covered with dirt. A cotton cloth was sometimes placed beneath the roof and over the contents of each bin. Varying considerably in size, the average bin was about eighteen inches tall by three feet in diameter. Their manufacture has been described in detail and figured by Kissell.[4] Pi Pa 251 415 286

These Pima granaries were usually placed on the roof, less commonly in groups on a platform of logs to keep them above the ground. Small sticks were placed across these logs and covered with arrowweed branches, which also served as a base for the bottomless bins. In post-Spanish times, groups of such granaries on a platform were enclosed by a low fence for protection against stock. In this connection, the reader is referred to Emory, Russell, Clark and Kissell.[5]

[4] Kissell, *Basketry of the Papago and Pima*, pp. 173-90.

[5] Russell, *op. cit.*, fig. 4; Clark, *Lessons from Southwestern Indian Agriculture*, fig. 12; Kissell, *op. cit.*, figs. 29, 30; Emory, *op. cit.*, p. 85.

5: Castetter & Bell N-5 (1938-1940 1942
NU28 Papago NU28
Pima NU29

Pa 251 415 285 Pima nest-shaped granaries were not used by the Papago. The very few storage baskets made by them were shaped like a hive, or a barrel, with incurving top, therefore of smaller diameter at the neck, and were about four feet in diameter and three high. The sides were usually crude coiling of twisted grass sewed together with mesquite bark, since arrow-weed is rarely to be found in their territory. These granaries usually were not placed on tops of buildings, but outdoors on stones or boards. Since, unlike the Pima granary, they had no roof, the opening was covered with an old flat basket or a broken olla. Being constantly exposed to the weather, Papago storage bins lasted only about two years.

However, Papago preferred to hide their food, and the usual expedient was to use jars rather than baskets. The most common jar was an old olla which had lost its porosity and no longer kept water cool. But special jars for storage purposes were made, as well as traded. The lid consisted of a piece of broken olla weighted with dirt or a stone.

Formerly the Papago also made temporary enclosures of sotol mats to store their grain.

A patriarchal Papago family stored its crops in several different places. A large supply was kept in the storehouse close to the village, while a few granary baskets might rest on stones near the dwelling, or, rarely, on the roof. A supplementary storage place was located in the flats not far from the base of the mountains, within easy reach of the winter camp. This was often a pit, deep enough to hold jars and baskets, and covered with brush or dirt. Here the baskets [Pa 304] were protected with branches of the very spiny cholla, *Opuntia Bigelovii*. During their winter travels, the family sent a man back to the storehouse now and then to get food, but they tried to leave the supply at the village untouched until spring, the period of food scarcity, and it was not drawn upon until absolutely necessary.

Pa 251 415 285 A second type of Pima storage container was of coarse coil, used to store maize, beans, wheat, wild seeds etc., and

5: Castetter & Bell N-5 (1938-1940) 1942
NU28 Papago NU28
Pima NU29

was more carefully constructed than the arrowweed bin. The largest of these were globular in form among both peoples and might be as much as six feet tall and almost as wide. The smaller ones were rather bell-shaped among the Pima, and more or less barrel-shaped with the Papago. They were covered with a lid (usually the bottom of an old basket) and sealed with mud.[6]

After the introduction of wheat, the Pima made such baskets of a foundation of wheat straw bound together with strips of willow bark *(Salix nigra)*, mesquite or catclaw *(Acacia Greggii)*. Papago foundation elements were beargrass *(Nolina)*, ocotillo or wheat straw, the binding material of yucca or mesquite bark. This is the type of basket which Bartlett[7] observed among the Pima, and described as large vase-like baskets made of wheat straw ropes as thick as a man's arm, coiled into graceful forms and sewed together. He asserted that these held from ten to fifteen bushels and were filled with wheat and shelled corn. We have been unable to satisfy ourselves that this type of storage basket, figured and described by Russell[8] and Kissell,[9] is aboriginal. These were kept in a small storage house, never on roofs nor outdoors on platforms. This house is comparatively modern and of the same type as that described by Bartlett[10] in 1852. It was eight or nine feet high, rectangular in outline, with walls made of stakes of ocotillo or sahuaro ribs set close together, and provided with a dirt-covered roof. Although customarily left open for free circulation of air, at times they were covered with a layer of mud.

At present neither Pima nor Papago shell their corn to any great extent before storing. Much of it is simply thrown on top of an ocotillo *ramada* and dried without husking, then shelled as needed.

[6] Kissell, *op. cit.*, pp. 179-85.
[7] Bartlett, *Narrative*, II, 234-36.
[8] Russell, *op. cit.*, pp. 68, 143-48.
[9] Kissell, *loc. cit.*
[10] Bartlett, *loc. cit.*

5: Castetter & Bell N-5 (1938-1940) 1942
NU28 Papago NU28
Pima NU29

Preparation for Use as Vessels and Rattles

Gourds were prepared for use as follows: First they were dried thoroughly, otherwise decay would occur in the process of preparation. The bitterness was drawn out by filling with water through an opening cut at the stem end, then allowing it to stand for three days so that the fleshy interior might decay. Most of the pulp was removed by working with a stick, then the gourd refilled and again allowed to stand for three days, after which as much of the remaining pulp as possible was scraped out. This process was repeated as often as necessary, or until the vessel ceased to impart any taste of bitterness to the water allowed to stand in it. Finally, the vessel was thoroughly rinsed with water several times and was ready for use.

Sometimes gourds which had been prepared as above were baked in live embers for two or three days to harden the shell, as this made them more durable when used as containers. It also gave them a glossy appearance since the outer surface peeled off.

Gourds or their seeds were never eaten. They were used for canteens, dippers, containers, storage vessels, ceremonial rattles and masks. For storing seeds, the hole made at the end of the neck was plugged with a stick. To prepare a gourd for use as a rattle the end of the neck was cut off, then cleaned as described above, and the gourd partly filled with pebbles taken from an ant hill. A wooden handle was fitted into the opening and secured with the gummy secretion of creosote bush or arrowweed. Gourds to be used as dippers or dishes were cut lengthwise by making a continuous row of holes with an awl the whole length of the fruit, then snapping it in two.

Devil's Claw

A single sowing of Devil's claw, or unicorn plant (*Martynia louisiana*), was made by both Papago and Pima, after sahuaro harvest, and the pods gathered before frost. This was woman's [462]

5: Castetter & Bell N-5 (1938-1940 1942
NU28 Papago NU28
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Pi Pa 276 The mature leaves were dried by the Papago in the sun on a sotol mat outside the house, or on a piece of ground swept clean for the purpose, and were regarded as ready for smoking when about half dried and very bitter. Leaves were usually dried by the Pima on a cotton blanket, either in the sun or the house, and stirred occasionally with a stick to facilitate this process. If a Papago wanted to use the tobacco before it was fully dried, some leaves would be toasted on a piece of olla over hot coals. However, customarily the leaves were fully dried in the sun and stored without breaking, or first rolled into balls before they were fully dried. They were then placed in an olla or gourd, covered with a piece of broken olla, and sealed with mud mixed with "sticky grass." Pa [415] [829] This dried tobacco might be stored in real bird nests kept in the house, but often in a cavity made by the red-shafted flicker *(Colaptes cafer collaris)* in a sahuaro tree. The Pima knew that leaves dried more rapidly in the sun, but those dried indoors were stronger and made better smoking, as the leaves curled somewhat and seemed thicker than the sun-dried ones; they were rolled and pressed into an olla and a cotton cloth tied over the top, or sealed by placing a shaped piece of broken olla over the opening and securing it with mud. This was for the purpose of keeping out moisture and insects. Neither in drying the leaves nor in putting them into the olla was any particular care taken to keep the leaves unbroken. The olla was stored in the brush house. When a quantity was wanted for smoking, the olla cover was removed, a few handfuls placed in a buckskin (or in later times canvas) pouch, then the olla resealed. This tobacco was very strong.

Among both Papago and Pima, the seeds, pods and flowers were not smoked, but occasionally if a man's supply were low he might crush and mix pieces of small stems with the leaves.

The Pima, after harvesting the ripe leaves, pulled up the plants at the end of the season, and tied them in bundles for storage. Leaves left on these plants matured more or less, were called "third tobacco," and were also smoked. The

5: Castetter & Bell N-5 (1938-1940) 1942
NU28 Papago NU2?
Pima NU29

Smoking

Pima usually carried tobacco in a special buckskin or foxskin pouch, decorated with sun symbols in bright colors and rattles, sometimes fringed, and closed with a flap folding over the top or occasionally with a drawstring. The simplest Papago pouches were a circular piece of dressed buckskin with a fringe around the entire edge, and tied up with a thong. Others were made of rabbit, or sometimes fox, skin with the fur left on. All present-day Papago pouches are of buckskin, dyed red with the root of *Krameria glandulosa*. They are made of two semi-circular pieces sewed together with fringe around the seam and a flap fastened by a knot or thong serving as a button.[4]

Papago and Pima had no true pipes, a fact mentioned by Lloyd[5] in 1911. Cigarettes for smoking tobacco were made usually from tubular stem sections of pigweed, or *bledo (Amaranthus Palmeri)*. These were from one-fourth to nearly an inch across, and six to eight inches long, cut when the plants were mature, dried and the pith bored out. After coating with a layer of gummy secretion from the mesquite tree, they were ready for use. A Papago informant said the *Amaranthus* stems were being used for smoking when he was a boy, but that reed grass *(Phragmites communis)* stems had been utilized at an earlier time and had fallen into disuse due to scarcity and consequent difficulty in finding them. This reed grass does not occur in southern Arizona (except along the Colorado), but is found along streams in Apache, Navaho and Coconino counties.[6] Russell[7] states that it was formerly common along the Gila. Rolled cigarettes, made by wrapping tobacco in inner corn husks, seem to have been a later development among both peoples. Any special gathering for the good of the tribe or ceremonial occasion demanded

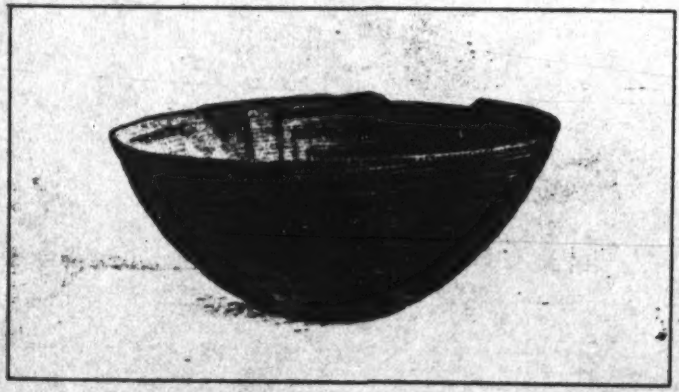
[4] Castetter and Underhill, *Ethnobiology of the Papago Indians*, p. 50.
[5] Lloyd, *Aw-aw-tam Indian Nights*, p. 89.
[6] J. J. Thornber, Personal correspondence, Feb. 13, 1940.
[7] Russell, *op. cit.*, p. 134.

6: Densmore E-5 (1920) 1929NU28 Papago NU28

285
982

a, Burden basket

415
285



b, Basket bowl in which tiswin was served

7: Lumholtz N-5 (1909-1910) 1912
NU28 Papago NU28

here also bees deposit their honey and bats make their homes. Sometimes rabbits attack the stem to get at the juicy pulp. 137

To the Indians the sahuaro is invaluable, and by tacit understanding they consider it a crime to cut one down. The grateful fruit comes at a time when most needed, and the Indians leave their habitations to camp among the sahuaro as long as the season lasts. Not only does the fruit then furnish them with their principal means of subsistence, but the greater part is boiled down to a sirup for future consumption in the winter, serving also as material for an intoxicating drink, which is used at the sahuaro festival. The seeds, too, are eaten after having first been ground on the metate, and they taste better than would be expected; the Indians also feed their fowls with them and many sackfuls are brought back to the houses after the sahuaro harvest. The wooden skeletons or ribs of the sahuaro furnish the Papago with light, strong, and elastic building stuff, and from the same material he makes the long stick which is needed to bring the fruit down from its lofty elevation, coloring the pole red with the juice of the fruit. Also chicken coops, chairs, traps, and similar articles of the household are manufactured from sahuaro ribs. Even the wooden tissue bags produced by the woodpeckers are made to serve as water bottles or drinking vessels. 222 [252 273] [342] [322] [415]

So important a part does this cactus play in the life of the Papago that their year begins with the sahuaro harvest. The season lasts from the middle of June till the middle of July. Every rancheria is supposed to make [805] 222 796

7: Lumholtz N-5 (1909-1910) 1912
NU28 Papago NU28

[Facing p. 56]

PAPAGO ETHNOLOGY

a, Saddle-bag of coarse fiber; length, 1.57 metres. *b*, Canteen of pottery ware, used when working in the field; height, 17 ctm. *c*, Cradle, with detachable hood; length, 56 ctm. *d*, Bundle of martynia pods, split and ready for use; they furnish the black color in basketry. *e*, Bundle of martynia pods, stored for future use. *f*, Water jar; height, 34 ctm. *g*, Package of dried squash bands; length, 31 ctm. *h*, height, 29 ctm. *i*, sahuaro baskets, water-tight, used in harvesting sahuaro fruit and in wine-making. *k*, Granary basket for keeping maize, wheat, etc.; height, 60 ctm.

285
K15
854

7: Lumholtz N-5 (1909-1910) 1912
NU28 Papago NU28

me from finishing the operation by telling him to ask eight additional dollars for his consent.

Their camp consisted simply of a roof of branches resting on four poles, sufficient to provide some shade during the day. Early in the morning all the female members of the household could be seen proceeding on their fruit-gathering expedition, each armed with a large basket and the usual pole, about twenty feet long and made from two pieces of sahuaro rib. At the top of the pole, as well as lower down, there is a kind of hook made by tying crosswise in these two places a small piece of greasewood by the aid of which the spiny fruit is broken off. Two or three hours later they returned, each carrying on her head her share of a heavy harvest. The skin with its spines had been removed in the field, so the inside of the huge water-tight basket presented an appetizing mass of crimson fruit pulp, as well as a great amount of similarly colored juice, which would keep for a few hours only. Most of the contents of the baskets was immediately emptied into large jars, to be boiled for about two hours, when the mass is strained in order to separate the numerous small black seeds. The juice is boiled for hours longer until it becomes sirup (*sítoli*), which is kept for future use in small earthen-ware jars, each neatly sealed with a piece of broken pottery and sticky mud. Being pleasant to the taste and much superior to molasses, I found this sirup excellent as part of my provisions. I also relished the fresh juice of the fruit when brought in cool in the morning.

7: Lumholtz N-5 (1909-1910) 1912
NU28 Papago NU28

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[Facing p. 110]

PAPAGO ETHNOLOGY

a. Maidens man's (throw; length, 60 ctm. b. Wooden tweezers used in pulling off certain cactus fruit; length, 38 ctm. c. Tattooing marks on woman. d, i. Feast (diam. 42 ctm.) and hack (diam. 44 ctm.) of cowhide shield used in Apache sham battles. e. Wooden spur, attached to one (right) foot; length, 16 ctm. f. Wooden implement, found at a tomb; length, 22 ctm. g. hair-brush of fibre; length, 15 ctm. h. Door to grass hut; at present made from wheat straw; height, 98 ctm. k, l. Bags of diverse matter, caused by woodpeckers' work in the mhuaro; serve as cushions and cups; height of the smaller one, 17 ctm. m. Bird, made from yucca root and painted blue; carried upright at the Santa Rosa feast; length of bird, 8 ctm.

7: Lumholtz N-5 (1909-1910) 1912
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Height, 6.5 ctm.

Height, 11.4 ctm.

ANCIENT POTTERY VESSELS OF THE PAPAGUERIA. EXCAVATED BY PAPAGO INDIANS NEAR FRESNAL, ARIZONA

[Facing p. 170]

7: Lumholtz N-5 (1909-1910) 1912
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who was present. Even a married man with full-grown daughters was subject to this depravity. One young Indian wanted to dress like a woman, but was prevented by his father. A Pima Indian, after losing his wife, had a healthy child by his daughter.

In regard to the industries of the tribe, attention has already been called to pottery making. Weaving was formerly practised on a loom lying on the ground, but the art is now lost. The Papagoes, as well as the Pimas, are somewhat noted for their basket work, though neither of them is as clever as the Apache in this respect. They make trays and bowl-shaped ware for household work and also some large, deep, water-tight baskets which, from their principal use, may be termed sahuaro baskets. In these is gathered the juicy fruit of the sahuaro; the sirup and water are mixed for wine making and the wine itself is offered at the festival. They are rare at the present time. Women are the basket makers and in the best ware the white material used is produced from strips of young willow shoots, while the pods of the *martynia* (devil's claw), split in two, furnish the black part of the texture. The good workmanship of old is falling into decline, and the significance of the decorative designs is almost entirely forgotten. There is only one woman at the present time who is able to do first-class basket work, and she cannot tell what the designs mean. In Sonora the making of basketry has ceased to exist.

Granary baskets are still in common use in the Santa Rosa valley. The large ones are made inside of the house, the small door-opening preventing their removal. The

12: Hill Y-5 (ca. 1940) 1942 NU28 Papa'go NU28

323 oughly. Taking a piece of the damp clay between the palms of her hands, the worker deftly rolls it into a coil just long enough to reach halfway around the top of the vessel. This is pinched into place with the wet hand. A similar coil completes the circuit. The anvil is now held in the left hand and supports the interior wall of the vessel, while the paddle rapidly strikes the exterior and smooths the coil into place. The upper edge is pinched off with the wet fingers until it is of an even height all the way around. After the addition of each completed coil, the piece is set aside to dry until it retains its shape.

When a sufficient number of coils has been added, the walls are sloped up with the handle of the paddle and the hands. The smoothing is done with a pebble dipped frequently in water. After the vessel has dried thoroughly in the sun, it is ready to be slipped. This slip is made by pouring off most of the water used for moistening the clay, dipping the hands, tools, etc., and applying to the vessel the fine wet sediment which remains in the bottom of the container.

A somewhat heavier slip is made from a very fine-grained red clay (or possibly shale, rather than clay) which apparently contains a high percentage of hematite. This material is obtained from the mountains near by, ground up, mixed with water, and applied with a piece of rag. In general, the thinner type is employed as a wash on ollas or on cooking pots which are subjected to heat, and the finer, thicker mixture on the others. After the application of the slip and a final polishing, the vessel is ready for firing.

A shallow pit is dug and exposed to the air and sun, usually for a day, to drive out all traces of moisture. Small branches and chips of mesquite are burned to form a layer of coals and ashes. On this are arranged pieces of tin to support the vessels. The latter are placed mouth downward upon the tin and covered with pieces of the same metal. Sticks of mesquite about a foot in length are stood up on end and rested against the tin, and the whole covered with chips and small branches. The firing process takes about 20 minutes, then the ashes are knocked off, the tin removed, and the vessels lifted out with two long sticks and set aside to cool. When they first emerge from the pit, they are a rich chocolate brown, but upon cooling, soon change to dull red. Probably prior to white contact, the pottery was fired in much the same manner as that practiced by the Pima. Possibly large fragments of broken ollas or jars took the place of the tin.

323 386 When the vessels have cooled sufficiently to permit handling, the black decoration is applied. The paint for this is made by boiling down mesquite gum and chips of the wood. When finished, it is a thin brown liquid which is applied by means of small sharp-pointed sticks. The decorated vessel is then held in the heat and slowly revolved until the paint turns black and sets. This completes the process.

323 415 [352] The olla or water jar appears to be the most-used article among the present-day Papago. Many were observed beneath the ramadas of the houses, sometimes suspended from the cross-beams, sometimes placed in three-forked logs set upright in the ground. The majority of those now used are of a plain, unslipped earthenware in the natural color of the clay. Apparently a thin reddish wash is sometimes applied to the exterior. [531] Several large storage ollas of a grayish or brownish buff, decorated in a brownish red and very suggestive of ancient Hohokam ware, were observed. Smaller black cooking pots with convex bottoms are still to be found. This black color is due to a deposition of soot from the fire, rather than to the natural color of the clay. Bowls and cups are likewise used at times. The writer was also shown several human figures, chiefly male, [534] which had been made in neighboring villages.

17:Castetter & Underhill N.E-5 (1931-1934) 1935
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At the Well every family had a house or some sort of shelter, and there they kept a duplicate set of heavy household utensils such as jars and grinding stones.

When they settled for the winter the men hunted deer in the nearby mountains and the women made pottery and baskets, although many families wandered about hunting and trading and did not settle. The Altar valley in Sonora was productive all the year and families from the north traveled down there to work for their richer kinsmen. There was, in fact, a constant going to and fro over all Papagueria.

In June the white flowers began to appear on the giant cactus *(Carnegia gigantea)* and then every family returned to pick the fruit and to carry it down to the summer villages for their great yearly ceremony which would bring the rain. The rains came in July, then the fields were planted and the new year had begun.

In recent days these migrations have been extended rather than otherwise. The Papagos now plant winter wheat, as they were taught by the Spaniards, and must come home in May to harvest it. Often they go to the Gila and harvest the Pima crop, working on shares, and in July they go again to the Gila to pick the Pimas' cotton. Thus there are only a few months in the year when the people can be found at either the Fields or the Wells.

Houses at all the villages are now made of adobe. In the old days they were low, brush covered structures, of what has been called "wash basin shape," and the ceremonial houses are still made on that ancient pattern. There were no windows and no smoke hole. The door was a low arch, just high enough for a man to crawl through, and the only furniture was a number of mats made of sotol strips *(Dasylirion wheeleri)* laid around the edge of the one room, and which served both to sit and to sleep on. Valuable property, such as the man's bow and arrows and the woman's basketry materials, were thrust into thatch or hung from the rafters.

252 Cooking was done in a small roofless enclosure out-
412 side. There the woman kept her mealing slab—a rectangu-
415 lar block of granite hacked into shape with another stone. She had a mortar made of a section of cottonwood log, a large porous jar for drinking water, and a few smaller pots for cooking. Most of her utensils were baskets, for this migratory people found pottery a burden. There were large willow baskets for storage, others for winnowing, for parching seeds, and for eating and drinking. Willow baskets, tightly woven and water-tight when wet, took the place of dishes. Some households owned no pottery except the water-jar.

291 Clothing, in the older times, was of skins, the man
302 wearing a breechcloth of buckskin, the woman a buckskin skirt, while those who could trade for cotton had a one-piece, wrap-around cotton skirt. Both sexes wore their hair long but tied it up with a strand of grass while at work. For warmth they often covered their bodies with grease, and on ceremonial occasions added to the grease
[304] red and white paint. Women were tattooed with four lines from mouth to chin, in zigzags, dots, or merely straight lines.

291 The Papagos were a sandal-wearing people. For long journeys they made sandals, first of basketry materials and later of cowhide, but while at home they went barefoot. Occasionally we hear of the rabbit skin blanket which was so long known among their neighbors both of Arizona and California.

412 Papago women, busy with basketry, pottery, and the gathering of wild foods, did little work at agriculture, so the men took care of the fields and did the hunting. They also had to make frequent war expeditions to pursue marauding Apaches who raided their villages to take away crops, women, and later cattle and horses. Men also made trading expeditions to the Pimas and into Mexico. As a
525 means of acquiring wealth in these primitive times gam-
556 bling should not be overlooked, for success in the ancient

17:Castetter & Underhill N.E-5 (1931-1934) 1935
NU28 Papago NU28

Another occasional food, or more accurately a drink, is the pulp of the *viznaga*, barrel or niggerhead cactus *(Echinocactus wislizeni)*. If one becomes thirsty on a journey he cuts the top off a plant with a sharp stone, pounds the pulp and scoops out the juice with the half gourd *(Lagenaria vulgaris)* which he carries as a drinking and eating vessel.

According to Thackery and Leding (25), the fruits of the viznaga are cut up and cooked with cornmeal or other material, the seeds being discarded.

Root, Tuber, and Bulk Crops

Sand-root, *caa't* *(Ammobroma sonorae)* October
Wild potato, *taiaroti*. A climbing species of *Solanum*. Summer
***mo'otari* *(Franseria tenuifolia)* Summer**
Wild onion, *sipuia* (Span.) *(Allium unifolium)* May
Papago Blue Bells, Covena, *ha'at* *(Brodiaea capitata* var. *pauciflora)* April
Night-blooming cereus, *ho'o'k iva* *(Cereus greggii)*

The staple root crops are the sand-root *(Ammobroma sonorae)* and the root of *Franseria tenuifolia*, both of which appear on the flood plains near the villages after the rains. Whole families go out with digging sticks usually in October to gather the roots of these species, and live upon them while they last. Any surplus is sun-dried on the house-roofs and stored in jars.

The sand-root has been used from time immemorial by the Papago and is parasitic upon the roots of the small desert shrubs *Coldenia plicata* and *C. Palmeri*, as well as on *Eriogonum deserticolum*. It is to be found in parts of the Southwest where the average rainfall is between only two and five inches, and is eagerly sought by the Papagos, who consider it a most excellent food; it is eaten either raw or roasted (6, 17, 24).

Palmer (20) records that these people dried and ground the stems of the sand-root with mesquite beans *(Prosopis*

Russell (22)
222 refers to the Papagos as trading acorns *(Quercus oblongi-*
[439] *folia)* to the Pima.

The important fruit crop comes from species of cactus, and of these the giant cactus or sahuaro *(Carnegia gigantea)* is most outstanding, its ripening preluding the rainy season, the drinking ceremony, and the new year. The Papagos depend upon this fruit to a much greater extent than do any other Indian people of the Southwest, and some six hundred families gather about 100,000 pounds each year (25).

222 Every family has an accustomed camp on some slope
361 where sahuaro grows, and here they have a rough shelter, with a water jar, perhaps a metate, and a cooking pot. Cactus camp is always an occasion of jollity. It means almost the first fresh food of the year, for much of the pulp is eaten fresh; the first taste of anything sweet; and, principally, the preparation for the great drinking ceremony which is regarded as responsible for bringing the rains.

222 The picking season lasts about two weeks. The women of the camp, sometimes assisted by the men, make two trips a day into an area perhaps half a mile square, which is their acknowledged territory, visiting every cactus plant in this area once in three or four days to gather the fruit as it ripens. Each carries a bowl-shaped, water-tight bas-
● [415] ket (more recently a lard pail is used) to receive the pulp. One large basket, used as a general receptacle, is propped in an ocotillo bush *(Fouquieria splendens)* at some central point.

222 The fruit of the sahuaro grows at the extreme top of
417 the shaft, which is sometimes twenty-five feet high, or at the tips of the branches, and is hooked down with a long pole made of two giant cactus ribs spliced together. For-
[283] merly the splicing was agave fiber; now it is wire. At the top of this pole, and again at a lower point, perhaps five feet down, are affixed short transverse sticks of creosote bush *(Covillea glutinosa)* or of catclaw *(Acacia greggii)* for the purpose of aiding in dislodging the fruit.

17:Castetter & Underhill N,E-5 (1931-1934) 1935
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The fruit, if fully ripe, splits open when it hits the ground; if not, the woman twists off the fruit stalk which bears a hard circular calyx with sharp edges and with this she splits the fruit. In either case she scoops out the pulp from each half with two motions of her thumb and throws it into her basket, while the thorny shell she throws on the ground, taking care that its red lining falls uppermost, for this hastens the rain.

After each round the women pour the newly gathered pulp, of a deep crimson color, into a water-tight basket and soak it to remove the black seeds, which will later be used for flour. Since it shrivels within a few hours if left in the sun, they cook their harvest daily, usually at midday which is too hot for pulp gathering. The mother or mother-in-law officiates on this important occasion. She drains the water from the pulp, some of which has been soaking since the night before, breaks up the masses, shakes out as many seeds as possible, washes and dries these on a mat in the sun, and places them in a jar. The pulp, with double the quantity of water, is brought to a boil in a clay pot, then removed from the fire and placed in a straining basket. The liquid drained off is placed on the fire and boiled to a syrup, this being set aside from day to day. When the whole quantity is at hand it is sealed in a jar made air-tight by cementing a potsherd over its mouth with adobe mixed with fine grass or a transparent yellowish-brown "gum" gathered from the *samo prieto (Coursetia glandulosa)* upon which it is produced by a scale insect *(Tachardiella fulgens)* (25). This is the liquid from which the ceremonial drink *navai't* is made and each family keeps its supply to be fermented at the time of the general ceremony (see also Densmore, 9).

When the juice has been drained off as described above there remain the pulp and the seeds which can also be utilized. All households make cactus jam, the most important sweet in their diet, and for this only a portion of the juice is drained off. The remaining moist pulp is boiled to a sweet, sticky mass, looking much like raspberry jam.

17;Castetter & Underhill N,E-5 (1931-1934) 1935
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the buckskin lacing. Another type of sandal is described as made of two thicknesses of deerskin dyed red and bound together at the edge with white deerskin. The "rich" had buckskin moccasins to the knee.

Pouches were made for carrying tobacco, paints and fetishes, the simplest being a round piece of dressed buckskin fringed all around the edge and tied up with a thong. All those made at present are of dyed buckskin (colored red with dye from the root of *Krameria glandulosa)* made of two semi-circular pieces sewed together, with fringe around the seam and a flap fastened by a knot of thong serving as a button. Others were made of rabbit skin *(Lepus* sp.) or sometimes fox *(Vulpes fulvus)* with the fur left on.

No headdress was ordinarily worn, although warriors had various caps and ornaments. The *siwoṭ* was a single upright plume, stuck in a headband which might be woven or be merely a deerskin thong. The *pitcpoṭ* was a row of feathers around the head like a crown thrust under a buckskin band. A more elaborate bonnet was the *acki wonam* —a buckskin cap with upright feathers sewed closely all over it with an especially high tuft on the top. There is also mention of a cap of peccary skin *(Pecari angulatus)* fitting closely to the head with upright eagle *(Aquila chrysaetos)* or hawk feathers (because they are the best fighters) sewed around its edge and a mask of buckskin hanging over the face and tied around the neck. Warriors might also tie a bunch of eagledown to the hair at the top of the head, or some long feathers to the hair at the back.

Men wishing to keep their hair out of their eyes tied it with a deerskin thong, or for gala occasions with a woven headband of red and white cotton. For war they tied it at the back of the neck with a deerskin thong, then twisted the mass into a short club wound about with deerskin, and this was specifically called the war knot. Women always wore their hair loose except for a thong or a twist of grass tied around the forehead while working. In racing they brought the whole mass of hair up over the forehead and back again,

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285 and weft of the soapweed *(Yucca elata)*. A form of screen door was made by joining a row of sahuaro slats by one or two rows of deer hide thong in simple wrapped weave, while for a shelf they used a narrower row of similar slats stiffened at each end by a transverse slat bound on with a thong.

285 The cradle board was about two feet long, made on a 854 frame of catclaw twigs, willow twigs, or mesquite root in the shape of an elongated arch, while transverse pieces of giant cactus rib were bound across this frame with deer sinew. The transverse pieces did not extend to the rounded end, where a small coiled basket was lashed to hold the baby's head "so it will not be flat like an Apache." A small mat of shredded aloe fiber was laid over the giant cactus ribs, while another similar mat covered the baby and was lashed to the cradle with buckskin thongs.

285 Bird cages were made with two triangular or arch- 231 shaped ends over which was tied a flexible mat of giant cactus ribs, made on the principle of the door.

285 For ceremonies such as the *vikita* or harvest festival, large structures were made, sometimes six feet square, representing clouds or mountains. The basis was a framework of flexible ocotillo rods *(Fouquieria splendens)*, bent into shape and lashed with thongs. These were carried on light platforms made like the shelf.

COIL WITHOUT FOUNDATION

285 The carrying net is no longer used since the Papagos 415 have come into possession of wagons, but it has frequently been described by earlier observers (16, also Weltfisch unpublished).

The net itself was of two-ply aloe fiber *(Agave americana)* in the shape of an inverted truncated cone, the stitch being what has been called "coil without foundation." The cone was supported by four cross poles and fastened to the rim at the top by hair cord, which also passed through the hole at the bottom to be tied again with hair cord under-

17:Castetter & Underhill N.E-5 (1931-1934) 1935
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neath. The whole projected above the woman's head and served as stays for loads of wood and other loose objects. The frame was so constructed that the rear portion of it could rest flat against her back, while she supported the two front poles of the frame by a plaited headband made of aloe cord. The carrying net is the only article of basketry dyed in color, the frame being spotted with red clay and the lacework rubbed with red clay and indigo to bring out the pattern.

Men carrying deer meat used a bag of knotted netting without a frame, made of two-strand aloe fiber. After the advent of the horse these were used as saddle bags. Also, two of these bags stuffed with grass formed a primitive saddle.

PLAITING

Since the Papago had little cotton or weaving they supplied the lack of fabrics partly by skins and partly by plaited articles made of sotol *(Dasylirion wheeleri)*. Sotol, too coarse and rough to be used in making clothing, was utilized to make large, tough sleeping mats which could be rolled up and carried about; also in making cradle mats, back mats for the carrying frame, headbands, headrings, and two kinds of baskets.

Sotol leaves are prepared for use by first scraping off the spiny edge with a knife, then splitting the leaves lengthwise in two with the thumbnail (the thumbnail in olden days was kept long to be used as a knife). These withes are triangular in cross-section, and the cushion of pulp on the inner margin is removed, making a flat strip of uniform thickness about an inch wide, with both a rough and a smooth side. The withes are dried in the sun for a few days, then wrapped and stored. When needed they are buried the night before in moistened ground in order to make them flexible.

The sleeping mats made of sotol, and similar to the Mexican *petate*, were about six by three feet with rounded

17:Castetter & Underhill N,E-5 (1931-1934) 1935
NU28 Papago NU28

237 half an inch at each end and laid in a slightly spiral direc-
411 tion on the shaft just behind the nock, and both bare ends of the quill were bound on with wet sinew. Either two or three feathers were used for war arrows.

411 Wooden-tipped arrows were made of wood of the creosote bush *(Covillea glutinosa)* or of the arrow bush *(Pluchea sericea)* and might be full length with the tip rubbed sharp on a stone and hardened in the fire; or they might have a shaft of reed or Spanish Bayonet *(Yucca elata)* for three quarters of their length. This made an exceedingly light arrow particularly desirable for birds.

411 Quivers are of comparatively recent invention. Some
415 were made from the skins of such animals as the mountain lion *(Felis oregonensis hippolestes)*, wildcat *(Lynx ruffus)* or coyote *(Canis lestes)* with the hair left on, the skin not being softened but sewed up while fresh and allowed to dry hard. The legs and tail were cut off (excepting the coyote whose tail was left for decoration) and the skin sewed up in rough bag shape. The head, from which the skull was removed, was left on and stuffed with grass so it would dry into the proper shape. The hollow head served as a hood over the arrows.

All these skins made small quivers and were used in hunting. For war, large quivers were made of antelope hide *(Antilocapra americana)*, and such hide was cut and sewed in the shape of a cylinder a foot in diameter. In some cases a fringe of dressed buckskin appeared down the vertical seam.

Particular individuals had their quivers made of
[533] dressed and softened hide, generally from the white-tailed deer *(Odocoileus couesi)* or antelope. These might have a fringe down the seam and a painted design of some brave animal on the back, the design being outlined with the secre-
[304] tion from the white brittlebush *(Encelia farinosa)*, then smeared over with red clay. Sometimes a yellow paint made from Spanish Bayonet flowers *(Yucca elata)*, ground to powder, was used. The quiver was slung by a strap two

17:Castetter & Underhill N,E-5 (1931-1934) 1935
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inches wide made of fox skin *(Vulpes fulvus)* with the hair left on to prevent chafing.

The Papagos at present say that certain of the bravest men fought with club and shield, and a club is mentioned for the "Pimas" in early Spanish accounts (10, 27). The club was of ironwood *(Olneya tesota)* about eighteen inches long, and informants say that it was merely a roughly shaped length of wood with a thong run through a perforation in the upper end so that it could be carried. The shield was a disk of leather sixteen inches in diameter made of cowhide or horsehide. Ownerless cows and horses have roamed the country ever since the coming of the first Spaniards, and the Papagos hunted these like deer.

The customary way of making the shield was to soak the hide in water, then cut out the disk and lay it on hot ashes to harden, stamping it into a slightly convex shape, two holes first being punched near the center about six inches apart. When dry a thong was laid along the outside of the shield, its two ends passing to the inside through these holes. On the inside was a short stick of wood with notched ends to which the thong ends were tied, forming a handle. When dry the shield was painted with mesquite "gum" *(Prosopis velutina)* prepared as for pots, or with red and white clay.

FIRE

Fire was made with the palm drill; the heart of a cactus rib *(Carnegia gigantea)* was held with the feet while the drill of creosote bush wood *(Covillea glutinosa)* or arrow bush *(Pluchea sericea)* was revolved between the palms. A little sawdust from dry sahuaro rib caught the spark which was transfererd to a pile of dry grass and manure.

POTTERY, EATING AND DRINKING VESSELS

Although a few old pottery jars appear to have lines in red ochre at present all decorations are in black. This black is usually made from the secretion of the mesquite

323 415 386 bush *(Prosopis velutina)*, which is scraped off in summer after the rains, made into balls and stored. When needed for use these balls are boiled in water, strained through a cloth, boiled again until syrupy, and applied with the tip [17] of a feather. The informants stated that the use of this substance was learned from the Maricopas.

323 In the making of pottery two paddles are used, usually of mesquite wood *(Prosopis velutina)*, one for the bottom and one for the sides of the jar. The one for the bottom is shaped like our butter paddles while the one used for the sides is shaped like a cleaver. Among the Papagos pottery is not coiled as is the case among the Pueblo Indians, but is always paddled into shape.

415 Drinking cups are usually made of gourds *(Lagenaria vulgaris)*, although small baskets might also be used. Gourd drinking cups are made of the gourd fruit cut in two longitudinally while fresh, the pulp and seeds removed and the hollow hemispherical halves then dried. A hole is punched in the shells and they are then strung on a man's belt with a buckskin thong. Often they are the only eating and drinking vessels on journeys.

Another vessel is furnished by the giant cactus *(Carnegia gigantea)*. When the surface of this plant is bruised such as by the pecking of woodpeckers the plant responds by covering the wound with a hard scar. This scarred area is sometimes rather large and deep, forming a natural cup-shaped structure which is used by the Papagos as a dish or a tobacco pouch. These dishes are eagerly collected and most households have an assortment of them.

Russell (22) refers to the Pima as obtaining small wooden trays and plates—circular, elliptical, and rectangular—from the Papagos. He also refers to the Papagos as making ladles of palo verde wood *(Parkinsonia microphylla)*. These are probably Mexican in origin.

19: Dobyns E-5 (1950) 1951 NU28 Papago NU28

[Housing in Southern Arizona Labor Camps]

362

[415]

A few Papagos live in labor camps with stout cabins made of concrete blocks . . .

[296]

Some live in comfortable remodeled barracks . . .

But most live in board cracker boxes . . . (few have gas like this one and less than half were ever painted) . . .

and many live in true camps . . . tents . . .

19: Dobyns E-5 (1950) 1951 NU28 Papago NU28
[Housing in Southern Atizona Labor Camps]
362
[415]

A ramada made living more bearable...

The Desert People have learned to lock their cabins while they work.

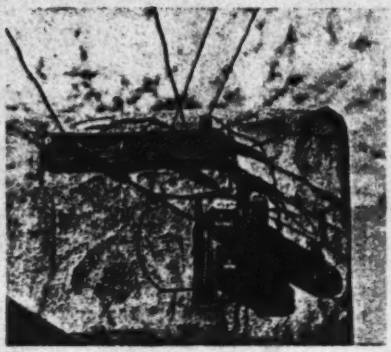
Most Papagos slept on cots . . . some on the ground.

Usually camp furnishings were Anglo materials . . . scissors and thread, a comb . . . but some Papago material culture persisted . . . corn, and a willow and devil's claw basket.

[285]
[177]

[Arizona Labor Camps]

365
415
252
291
35



Some camps had electricity...

and cooking was easier.

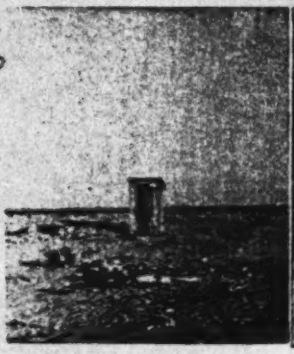
291
313
252
35
415

Most camps had a wood pile...

and cooking was a problem.

[Arizona Labor Camps]

514
466



Cotton growers build outhouses . . . like obscene jokes on the landscape . . .

and the Desert People take a poor example home . . . in worse materials.

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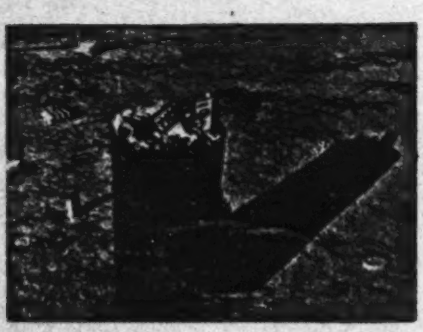

Garbage cans were hardly fly-tight . . . or emptied often enough . . .

and when they were, not in sanitary places . . . but in washes like the Santa Cruz.

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364F

fuse. At least one such container shall be located within 100 feet of each shelter on a wooden or concrete stand.

"(b) Incinerators or trash burners shall be provided in every camp for burning combustible rubbish.

"(c) Facilities for washing garbage cans shall be provided at every labor camp.

"(d) When garbage receptacles are full, and at least three times a week and oftener if necessary, the garbage and refuse shall be removed. In hot weather garbage containers shall be emptied and thoroughly cleaned daily.

"(e) Garbage, combustible refuse, and rubbish shall be disposed of by incineration or by burial in a pit, or by transportation to a properly maintained and operated sanitary fill approved by the State board of health or such other methods as they may approve."[1]

The conditions which would be found under this system are found in very few if any southern Arizona labor camps. In Pima county in 1950 about three-fifths of the camps provided 50 gallon metal drums for garbage, spotted through the camps. Workers were expected to deposit their refuse in them, and they were hauled off periodically and dumped. The most frequent regular interval of collection mentioned to the author was once a week. The favorite dumping ground in the Marana area was the channel of the Santa Cruz river where the next flood could be depended upon to wash the refuse downstream to plague the Eloy-Picacho area. The metal drums provided were converted oil drums without covers--not a single covered, fly-tight garbage container was seen in the course of this study. Nor was a single one of these garbage cans seen on any sort of stand: concrete, wood or otherwise. In camps where garbage cans were not provided, garbage was dumped in a pit dug near the camp, or in an arroyo handy to the cabins (where it would wash downstream into the Santa Cruz to plague the Marana area) or burned on the ground or more rarely in a concrete incinerator.

[415]

In the main cotton producing county, Pinal, about half the camps had no garbage disposal arrangements in 1950 other than piling refuse on the grounds and/or

[1]Federal Interagency Committee on Migrant Labor, 1947, p. 42.

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364 [415] burning it there. Perhaps two-fifths of the camps in the county were provided with 50 gallon metal drums for refuse, but like those in Pima county, they lacked covers, and sat on the ground instead of a stand. Collections were just as irregular as in the smaller cotton growing area. Garbage collection was a sanitary joke in many Pinal county labor camps, for about three-fifths of the farmers providing garbage cans carried them no farther than across the road or somewhere on the camp grounds to dump them. This practice made many fine homes for wandering flies in the hot fall months of 1950.

One farmer hiring Papago irrigators derived some benefit from his workers' scraps--and probably kept as clean a camp as any--by keeping a large flock of geese which roamed freely through his camp cleaning up the grounds.[1]

WATER SUPPLY

312 The water workers drink has a very important effect on their health, and for labor camps the suggested code calls for less water than each laborer should have in southern Arizona with its extremely high temperatures and abnormally dusty conditions. So the suggested code may be considered lenient for southern Arizona conditions.

"Article 3. Water Supply

"(a) An adequate and convenient supply of water of quality approved by the State board of health shall be provided in each camp for drinking, culinary, bathing and laundry purposes.

"(b) A water supply shall be deemed adequate if and when it is capable of delivering 35 gallons per person per day to the camp site at a rate two and one-half times the average hourly demand.

"(c) The distribution lines shall be capable of supplying water at normal operating pressures to all fixtures for simultaneous operation and water outlets shall be distributed throughout the camp in such a manner that no shelter is more than 100 feet from a yard hydrant or similar outlet.

[1]Statements on garbage disposal are based on information gathered on 14 Pima county and 12 Pinal county camps.

19: Dobyns E-5 (1950) 1951 NU28 Papago NU28

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"(d) In those areas where piped distribution of water is impracticable...Every well shall be tightly covered, and the water shall be obtained therefrom by means of some type of pump. Water shall not be drawn from any well by means of buckets or other containers. In the event it is necessary to haul water, the containers both in transit and at the labor camp shall be cleaned and sterilized frequently, and shall be kept tightly covered. If water is secured from tanks or containers a spigot for withdrawal therefrom shall be provided, and it shall be unlawful to dip water therefrom.

"(e) The type of drinking facilities shall be approved by the State board of health."[1]

[291] All the water drunk in southern Arizona camps comes from wells, since surface water is scarcely sufficient to supply the area's population, and too distant from the population centers to make transporting it feasible.

In Pima county about 70% of the labor camps are supplied water directly from storage tanks on wells at the site or at the nearby home of the cotton growers.[2] However, in a fifth of these camps workers had to carry [415] their water from a tap at the storage tank to their cabins in buckets, and store it in their cabins in whatever containers they might have. Except for one camp visited provided with inside plumbing, the rest were serviced by hydrants outside the cabins. The number of hydrants supplying water piped from a storage tank varied from 1 for 3 worker's cabins to 1 for 14 cabins, averaging 1 outside hydrant for each 5 cabins.[3]

Nearly a third of Pima county labor camps lacked water delivered directly from a well in 1950. They were about equally divided between camps equipped with cisterns filled from tanks hauled from the farmer's well and camps where a tank-trailer of water was parked. Pickers drew water from cisterns with hand-pumps,[4] with an averaged of a single pump for each 16 cabins.

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[1] Federal Interagency Committee on Migrant Labor, 1947, pp. 40-41.

[2] Of 14 camps on which data was obtained, 10 received water from storage tanks at a well--71%.

[3] Actually 4.89 cabins, judging from data from 8 camps.

[4] 47 cabins had 3 pumps, averaging 15.66 in 2 camps studied.

19: Dobyns E-5 (1950) 1951 NU28 Papago NU28

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Water

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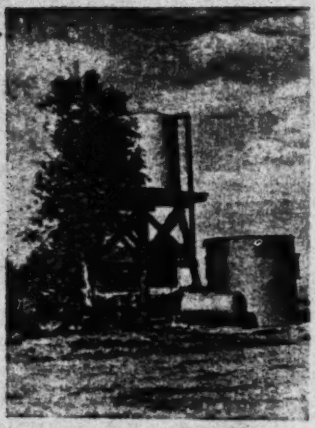
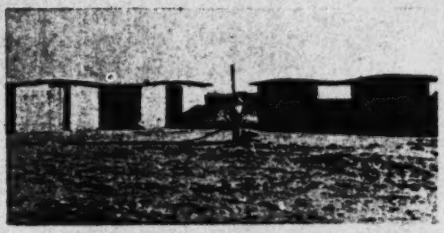


Pumped from a well and stored in a good tight tank...



delivered from 1 faucet for 9 cabins which looked like they'd been sawed from the same tree...

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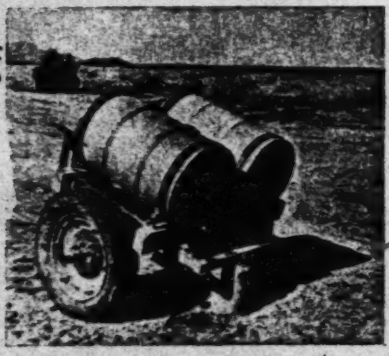
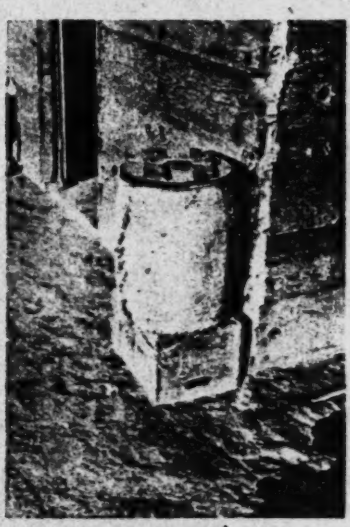


or two 50-gallon drums for 5 families ...which is ridiculous...



but kept in an assortment of containers at each cabin.

29: Dobyns E-5 (1950) 1951 NU28 Papago NU28

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"(c) An adequate supply of hot and cold running water shall be provided in all labor camps for bathing and laundry purposes unless otherwise authorized...in which case facilities for heating water shall be provided.

"(e) Facilities for drying clothes shall be provided."[1]

515
466 These standards are met only on a few small cotton farms in Pima and Pinal counties where the farmers have invested in labor efficiency to the extent of installing indoor plumbing for their laborers. In these cases, the facilities for washing and bathing are considerably better than the standards of the suggested labor camp code.

However, if this suggested code were the law of Arizona, over 95% of the growers in both counties would be out of conformance. They provide no washing or bathing facilities beyond a hydrant where workers can obtain water.

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[404] One reason Papago women do not put in a full workweek picking cotton is the amount of time they must spend in the camps washing out clothes in a galvinized tin wash-tub on an old-fashioned wash board. The clothes are hung out to dry on fences and trees in some camps, although most had clothes lines that appeared to be temporary affairs erected by workers rather than camp operators.

515
[415] Bathing in southern Arizona labor camps is a major operation. It is a matter of an enameled wash pan and a cloth, or doubling up in a wash-tub. Arizonans poke fun at migrants bathing in irrigation ditches, but a ditch full of water is the most practicable bathtub in the labor camps --the bather can get wet all over. But if the pump isn't running--and cotton isn't irrigated during picking season--there isn't even water in the ditch.

Papagos and most other cotton pickers in the region manage to keep amazingly clean, considering the difficulties they encounter. Small townspeople who turn up their noses at dirty Indians and Okies might try keeping themselves sweet-smelling under camp conditions before criticising (then they would criticize employers).

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[1] Federal Interagency Committee on Migrant Labor, 1947, p. 41-42.

Jobyns E-5 (1950) 1951 NU28 Papago NU28

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Cleanliness was a matter of wash tubs . . . scrubboards . . . outdoor fires . . .

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Improvised clothes lines . . .

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404

and wash pans . . .